

# SCIENCE & PROGRESS

## New Steamer.

An Austrian inventor, Emil Alam, has hit upon a plan for propelling a boat which may at length revolutionize water travel. It makes an immense speed with little outlay of fuel.

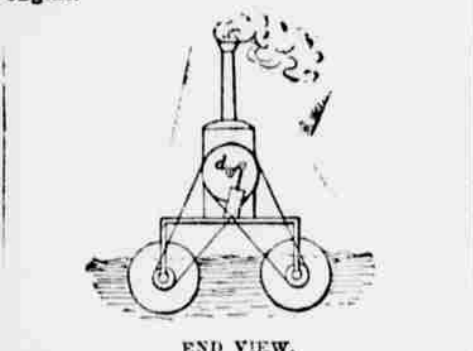
The reader is probably familiar with the catamaran sailboat, in which two boats are made fast, a few feet from each other, by a framework nailed upon the top. Sails are set upon the framework between, and the double boat glides through the water very rapidly.

The construction of the new steambot is somewhat similar. The ruling idea is to reduce the resistance of the water as much as possible.



SIDE VIEW.

The hull of the vessel was built of two hollow, cigar-shaped cylinders. The cylinders have brass along their length at intervals to which to attach the framework of the vessel. A wide metal rim is set on edge at an angle of forty-five degrees upon the cylinder, and winds around it like the thread of a screw for its whole length. The water in which the cylinders revolve acts as a nut for the screw thread, whereby a rapid motion in either direction is obtained. In Fig. 1 A is the cylinder, B D the engine.



END VIEW.

The engine is placed upon deck. All the decks and other parts of the vessel are above water. This does not offer no friction to the motion of the boat.

The number of cylinders is not necessarily limited to two. There may be as many as are desired. Power is transmitted from the engine to the cylinders by means of belts. This is shown in Fig. 2, which exhibits a view from the front end. Fifty years ago steam vessels were believed to have reached the limit of perfection. Since then there have been marvelous improvements. Perhaps we have here even one step further forward.

## Chest Development.

"If a Carpenter built a Chest, thirty-five" Stan in the show room of a fashionable tailor's I heard these words proceeding from behind the heavy drapery which cut off the measuring alone.

As I waited for attention, the curtain was drawn aside and a young man who had evidently just left his order for a suit of clothes, stepped out. He was of medium height, with decent broad shoulders, and fairly proportioned limbs; yet the flatness of the narrow chest spoiled all beauty of form by a lack of fulness, that meant a lack of power, a shorter life and a weaker hold upon existence.

Passing on into the street, my attention was attracted by this incident, to the forms of the men I met; and, in my walk, I did not see a single perfect development of chest among the crowd of young and middle-aged men of all classes and conditions that a great city's streets may show.

The common athletic meeting in the city park, where trained athletes, representatives from every part of the world, contended for the championship in feats of strength. Their perfect development was obtained through years of steady, careful training, which, by means of a variety of exercises, thickened, hardened every muscle in their bodies, and swelled out chests, whose full, curved lines, whose broad fronts and deep sides gave to the looker-on a sense of tremendous strength and of wonderful endurance.

Stand up a moment. Remove your coat and waistcoat. Put the tape-measure around you—under your arms, across your chest—tight. What does it read? Thirty inches. Put your hands on your hips, thumbs in front—that helps to throw your shoulders back; never mind it arms are also proof positive of a tendency to vulgarity; now take a long, slow breath through your nostrils. Notice the swelling of your abdomen; that is the sign of your chest. Say how far you can reach your arms—bent at the elbow—two and one-half inches in front, now take a very deep breath, and your lungs are filled. Do not hold your breath long enough to feel an uncomfortable in the slightest degree; and let it out through your nostrils, or else. Try that six times every night and morning, and in a month, make another measurement.

## Turning Gray.

Many persons begin to show gray hairs while they are in their twenties, and some while yet in their teens. This does not by any means, save a few, indicate a premature decay of constitution. It is a purely local phenomenon, and may exist in unusual bodily vigor. The celebrated actor and traveler, George Borrow, turned gray before he was 30, but was a strong, healthy swimmer and athlete at 65. Many other persons, and others who are afflicted extremely, both mentally and physically, do not become a hair white until after 40 years of age. The traveler, E. O'Haghey, says that in the many years spent in South America he never saw a white Indian, and scarcely ever a gray-haired one. The negroes turn more slowly than the whites. Yet we know an negro, born about 35 years old, who is a white gray. In this country sex appears to make little difference. Men and women grow gray about the same period of life.

## To Stain Wood.

Various methods have been devised for staining the surface of certain woods so as to produce the most perfect imitations possible of rosewood, walnut, etc. Out of these the most attractive work in this line is secured by simply spreading on the surface the material, a concentrated solution of permanganate of potash, this being allowed to act until the desired shade is obtained; the minute surface is then washed with water, and the surface is then stained with a preparation of brown peroxide of manganese, which the influence of the potash

at the same time set free, fixes in a durable manner on the fibres. When the action is terminated the wood is carefully washed with water, dried, and then oiled and polished in the usual manner. The effect produced by this process in several woods is really remarkable. On the cherry, especially, it develops a beautiful red color which resists well the action of air and light.

## Sewage Question Settled.

Shrewsbury, England, has solved the sewage problem to perfection. As the sewage enters the works clay, charcoal and blood are added as deodorizers; and, after thorough mixing, a solution of sulphate of alumina is added by which the dissolved and suspended impurities are quickly precipitated in one or the other of the settling tanks, from the fourth of which the water runs without further treatment into the river. The sewage as it enters the works contains about 37 per cent of suspended organic and inorganic matter, but in the effluent water there are found only the most traces of either. By experiment, it has been found that in this water fish will live for months. The deposit is then removed from the tank, and by means of pressure and artificial heat is deprived of its moisture till it attains the consistency and appearance of dry earth, in which condition it meets a ready sale as "guano."

## Muscle and Iron.

An athlete's muscles have often been likened to a bar of iron, but if "fatigue" be in question the simile is very wide of the truth. Intermittent action—the alternative pull and thrust of the rower, or of the laborer turning the wheel—is what the muscle likes and the bar of iron abhors. Troopers dismount to rest their horses, but to relieve a bar of iron temporarily of load only serves to fatigue it. Half a century ago Braithwaite correctly attributed the failure of some girders, carrying a large brewery vat, to the vessel being sometimes full and sometimes empty, the repeated deflection, although imperceptibly slow and wholly free from vibration, deteriorating the metal, until, in the course of years, the girders broke. These girders were of cast iron; but it was equally well known that wrought iron was similarly affected.

## Facts of Interest.

Gum camphor kept near silverware will keep it from discoloring.

It is said that a small bag of sulphur in a closet or drawer will keep red ants away.

Salt will remove the stain from silver caused by eggs when applied dry with a soft cloth.

An electrical subway commission in New York city is examining models of plans for putting telegraph wires underground.

The Joliet (Ill.) Steel company are now turning out double length steel rails. It is a great saving. The company intend before long to roll four-rail lengths.

A jagged lemon seed, swallowed with a glass of lemonade, caused the death of a young man in San Francisco. Moral: Don't drink lemonade.

The use of red and purple ribbons on government typewriters has been ordered to be discontinued for papers of permanent record. Red and purple are not fast colors.

It is now declared that there are in the Himalayas yet loftier peaks than Mount Everest, which has been long regarded as the highest mountain in the world. It is over five miles high.

# THE FASHIONS

## Indoor Toilets.

Fancy lobbies are the mode now for house dresses. They are of all kinds that imagination can devise, and any woman can make them for herself. These capes are especially becoming to slender women.

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pink silk, the lower edge of which is fringed out. Over the tight sleeves of pink silk, caught into a broad band, half of the green material, are large loose ones looking like long curls. Lengths of green moire ribbon caught into the side seams of the bodice are tied over the jabot, as seen, and harmonize with the bow closing the high neckband of the jacket, made tight fitting at the back. A peasant skirt of white or green material, with an under one of pink silk, completes the dress.

## Hints for Home Sewing.

A simple and new way of finishing the back forms of basques is to shape them in four scallops, one in each form, and line them with satin. Below these are two larger scallops gathered at the top and sewed underneath the two middle scallops of the four forms. In other basques, especially those of velvet, only two scallops are seen, one in each of the middle forms of the back. The short side forms are then separated about two inches from the main pointed below. An easy and stylish way of trimming sleeves is to use inch-wide galloon or else velvet ribbon instead of cuffs. Begin by sewing it at the end of the sleeve at its outside seam, crossing it to the inside seam, then taking it gradually upward far enough to come back on the front just above the row that is already there, stopping there when half way across, finishing by turning in the ends in a point. The economist is advised to use watered silks in remodeling last season's dresses of cloth or of velvet, and in combining with cashmere for house dresses. Black cashmere draped over black watered silk remains a favorite for house dresses. The heliotrop colors are also especially liked in these two fabrics. A smooth cloth basque of dark brown, red, gray or blue is in great favor for wearing with skirts left over from last winter, and is in keeping with skirts of striped woollens, striped silks, dark plaid woollens, and also with plain woollens of a lighter shade. These basques are of the plainest shape, without trimming, unless drooping cords be used on the chest, or else passing under the arms from an epaulet.

## Stooping Shoulders.

This is a serious evil. It compromises both appearance and vitality. A stooping figure is not only a familiar expression of weakness or old age, but it is, when caused by careless habits, a direct cause of contracted chest and defective breathing. Unless you rid yourself of this crook while at school you will probably go bent to your grave. There is one good way to cure it. Shoulder braces will not help. One must not be an artificial creature, but must learn to develop the muscles whose duty it is to hold the head and shoulders erect. I know of but one bull-eyes shot. It is to carry a weight on the head. A sheepskin or other strong bag, filled with twenty to thirty pounds of sand is a good weight. When engaged in your morning studies, either before or after breakfast, put this bag of sand on your head, hold your head erect, draw your chin close to your neck and walk slowly about the room, coming back, if you please, every minute or two to your book, or carrying the book as you walk. The muscles whose duty it is to hold the head and shoulders erect are hit, not with scattering shot, but with a rifle ball. The bones of the spine and the intervertebral substance will soon accommodate themselves to the new attitude. One year of daily practice with the bag, half an hour morning and evening, will give you a noble carriage, without interfering a moment with your studies.

## For Weddings.

It is no longer the fashion to display the presents at the wedding. They are arranged in an upper room and shown to a few friends of the bride the day before the ceremony. Nor is it the fashion for the bride to wear any jewels. These are reserved for her first appearance as a married woman.

Velvet is the material chosen for the mother's dress at the wedding. Her daughter, and the real lace flowers and shawls that have been laid out for use in the room for the wedding. A society dress with black velvet basque and train, has a mauve satin front covered with black Chantilly lace; a snail of the lace is draped on one side, and held by large jet ornaments. A mauve vest is set in below the square opening of the corset, and a bunch of mauve ostrich feathers is on the waist, while a border of these feathers is around the train. The reader will observe that trains are more trimmed along the edges than they have been of late, with either rows of loops two inches deep set along the edge of the train and falling on a soft satin puff, or else with feathers that also rest on a puff of satin.

## White Gowns in Mourning Toilets.

Pre-arrange crapes, pasties, and waistcoats may be worn at quiet "at home," or at a social concert, which are becoming so fashionable and often given at private houses, when bonnets are taken off. Braid crapes vests and fronts are also permissible, and turn-down collars and cuffs of white crape give a plain black robe an air of less sadness and dullness.

## Not Jewels.

A number of new tricks, recently introduced have borrowed their designs from the art of dress. Small bunches of hazel-pods with leaves of gold, and noons with diamond set rims, are represented in gold jewelry. The phobos point has also appeared as the ornament on scarf pins, and it is confidently expected, by people who ought to know, that the chestnut will soon follow.

## FASHIONABLES.

Bridal combs go to Washington for a wedding tour.

The round pin is now among leading new fashions in jewelry.

Bright red jackets, with turban to match, are very fashionable for visiting and driving.

It is proper to begin a letter to an unmarried lady: "Miss Smith, Dear Madam."

Bonnets are more eccentric and capricious than ever in shape, size, materials and trimmings.

Have a bunnet or hat to match every costume. They are generally made of the same material.

The fronts of basques have one or two points, the back frequently has the sash drapery attached to it.

New cloak, jacket, newmarket and ulster cloaks come in novel forms, flower, leaf and fancy forms, in metals and carved woods.

Green billiard cloth, precisely like that on billiard tables, is a novelty for tailor jackets to be worn by young ladies with black, green, or brown dresses.

The basque is still the bodice most favored by dressmakers, but it is made very short and simple, with or without a waistcoat, at pleasure.

Some of the richest millinery still is used by dressmakers to form the narrow waist coats, the cuffs and high collars of dresses of various kinds of material.

## Periodicals.

WIDE AWAKE for November opens with a frontispiece by Hassam celebrating the last of the autumn pleasures—a farewell ramble through the November woods. The serial, "A New Departure for Girls," closes with the triumph of the plucky heroine, and "The Governor's Daughter" also ends happily. "The Child's Paradise" ends by forcing the conviction on Flossy Tanglestein that America is the best land for a child's home after all. "Dan Hardy's Cripple" is a pathetic Thanksgiving-time story; and the second "Poppy Story" is given, one of the last labors of Mrs. Helen Jackson (H.H.) Mrs. Harriet Pinckney Huse gives some interesting early recollections of the novelist Cooper. There is much illustrated verse in the number, and the Chautauqua Readings have good specialties for natural history students.

The ART INTERCHANGE of Nov. 5th contains an extra supplement a beautiful colored plate (10x13) of an autumn landscape, entitled "A November Study." In addition there are: a bold and excellent design of grapes for decorating a portiere in dining room; a good study of a mounted horseman; an embroidery design for outlining on window shades; a blackberry design for painting on mirror frame; and a Japanese design for oyster soup plate. A pretty sketch called "Yes?" shows a maiden and her lover discussing the old, old story. The text includes an article on artistic house-furnishing, instruction in painting and embroidery. Book reviews, literary chat, art notes and news make up an attractive paper. Price 20 cents.

The PHRENOLOGICAL JOURNAL for November opens with a portrait and admirable sketch of the late Rev. Dr. Stephen H. Tyng. A portrait and sketch are also given of Prince Frederick Charles, of Germany. In an illustrated paper on Cornell University are also a portrait and sketch of President C. K. Adams. Among the more striking papers of the number are: Immortal Obligations; Our Colored Brethren; Geo. Eliot's Private Life; Notes from a Teacher's Diary; and The Influence of Inebriety on Civilization. The Notes on Science and Agriculture are also very good reading and the Editorial Items, Personals, Mirth, etc., add a very agreeable variety.

## Our English Cousins.

LONDON.—In a recent trade-mark suit it was shown by sworn evidence that over nine million bottles of St. James' Oil had been sold here during the past few years. Leading chemists certify that the sale of this remedy exceeds that of all others; and that it is being recognized as the best pain-cure ever discovered. In serious rheumatism it has accomplished astonishing results.

The post office department has decided that the delivery of letters bearing the new special ten cent stamp, on Sundays, shall be optional with the postmasters of the various towns to which the new law is applicable. It therefore rests with the postmaster to say whether such letters shall have immediate delivery when received on Sunday, or shall lie over till Monday.

## Bucklin's Arnica Salve

The best salve in the world for cuts, bruises, sore throats, salt rheum, fever sores, letter chapped hands, chilblains, corns, and all skin eruptions, and positively cures piles, or no pay required. It is guaranteed to give perfect satisfaction, or money refunded. Price 25 cents per box. For sale by Lutz & Briggs.

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The Best Newspaper in America, and by far the Most Readable.

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Rates by Mail Postpaid:  
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FOR EVERY DAY IN THE YEAR 7 00  
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## THORNE'S Hypophosphites.

Pre-eminently the Best Tonic, Stimulant, and Tissue-Maker.

Blood-Forming. Iron and Sugar of Milk. Bone-Forming. Lime, Soda and Potash. Brain and Nerve-Forming. Phosphorus. Containing the hypophosphites of IRON, LIME, SODA AND POTASH, succeeded in the only syrup prepared with SUGAR OF MILK, and flavored with the choicest fruits. Pleasant to the taste. The Hypophosphites and Sugar of Milk have an established reputation with the most eminent physicians of Europe and America in cases of

Consumption, Anemia, lack of blood, Chlorosis and all Wasting Diseases.

Dysentery, Erysipelas, Typhoid and Scarlet Fever, or any of the Eruptive Fevers. It speedily restores strength and vitality.

As a chemical food and a prompt and effective tonic it is especially adapted to the disorders incident to children while teething.

Physicians are requested in prescribing to specify Thorne's Hypophosphites.

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PRICE \$1.00 PER BOTTLE.  
Six Bottles to any address for \$5.00.  
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Yaggy's ANATOMICAL STUDY FOR SCHOOLS.

The most pleasant and profitable character is our Manikin of the human body. There is nothing like it in the market. It is strong, and will stand the most severe dissection and general anatomy when they show what they can do. You can dissect a person and see every organ and structure than if it were a real subject.

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## FIRST NATIONAL BANK OF OTTAWA.

Capital \$100,000.  
H. M. HAMILTON, President.  
E. T. GRIGGS, Vice President.  
JOHN F. NASH, Cashier.

Directors: Lorenzo Leland, E. T. Griggs, John F. Nash, H. M. Hamilton.

Exchange on Chicago, New York, and all the principal cities of the United States bought and sold.

Exchange on England, Ireland, Scotland and Continental Europe drawn in sums to suit purchasers.

United States Bonds, Gold and Silver bought and sold. Our facilities are such that we can offer inducements to customers, and we shall use our endeavors to give satisfaction to those entrusting us with their business.

Banking hours from 9 A. M. to 4 P. M.  
JOHN F. NASH, Cashier.

## NATIONAL CITY BANK OF OTTAWA.

(Formerly City Bank of Kansas, Allen & Co.)

E. C. ALLEN, President.  
T. D. CATLIN, Vice President.  
A. F. SCHUCH, Cashier.

Exchange on Chicago and New York, and all the principal cities east and west bought and sold.

Exchange on England, Ireland, Scotland and all important points in Continental Europe drawn in sums to suit purchasers.

U. S. Revenue Stamps of all denominations constantly on hand and for sale.

United States Bonds, Local Securities, Gold and Silver bought and sold.

Banking hours from 9 A. M. to 4 P. M.  
A. F. SCHUCH, Asst. Cashier.

## Professional Cards.

ATTORNEYS.  
G. W. W. BLAKE, Attorney and Counselor at Law. Room 9, second floor, Court House, Ottawa, Ill. All legal business promptly attended to. Jan 11

J. W. RARISOL, Attorney and Counselor at Law. Room 9, second floor, Court House, Ottawa, Ill. All legal business promptly attended to. Jan 11

R. W. RARISOL, Attorney and Counselor at Law. Room 9, second floor, Court House, Ottawa, Ill. All legal business promptly attended to. Jan 11

E. C. SWIFT, Attorney at Law, Army Block, Ottawa, Ill. Special attention given to probate matters. Jan 11

DUNCAN & O'CONNOR, Attorneys at Law. Office in Fetter & Metzger's Block, east of Court House, Ottawa, Ill. Jan 11

B. F. BULL, Attorney and Counselor at Law. Office on LaSalle and Madison streets, Ottawa, Ill. Jan 11

GILBERT & ECKELS, Attorneys and Counselors at Law, Fetter & Metzger's Block, east of Court House. Jan 11

C. B. CHAPMAN, Attorney and Counselor at Law. Office with D. McDougall, Ottawa, Ill. Jan 11

M. N. ARMSTRONG, Attorney and Counselor at Law. Office in Fetter & Metzger's Block, east of Court House, Ottawa, Ill. Jan 11

JOHN B. RICE, Attorney at Law, Reddick's Block, city of Ottawa. Will practice law in LaSalle and adjoining counties, and in the Appellate and Supreme Courts. Jan 11

A. J. WILLIAMSON, Attorney at Law. Office over Hall's Dry Goods Store, Ottawa, Ill. Jan 11

POWER BROS., Attorneys and Counselors at Law. Office in Fetter & Metzger's Block, east of Court House, Ottawa, Ill. Branch Office at Newark, Kentucky. Jan 11

T. C. TIGHE, Attorney at Law. Office with L. W. Brewer, Rooms 9, 10, Opera House Block, Ottawa, Ill. Jan 11